

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Rachel A. Meyers
Serial No. : Unassigned
Filed : Herewith
Title : 33521, A NOVEL HUMAN GUANINE NUCLEOTIDE EXCHANGE FAMILY MEMBER AND USES THEREOF

BOX PATENT APPLICATION

Commissioner for Patents
Washington, D.C. 20231

VERIFIED STATEMENT UNDER 37 CFR §1.821(f)

I, Katica Magovcevic, declare that I personally prepared the paper and the computer-readable copy of the Sequence Listing filed herewith for the above-identified application and that the content of both is the same.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of The United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 9/24/01


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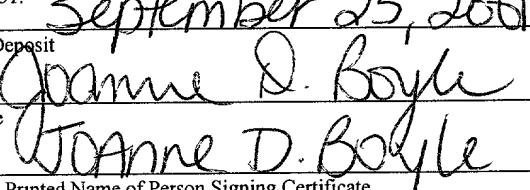
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Joanne D. Boyle

SEQUENCE LISTING

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<120> 33521, A NOVEL HUMAN GUANINE NUCLEOTIDE EXCHANGE FAMILY MEMBER AND USES THEREOF

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<150> 60/235,033

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325

330

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Asn Thr Asp Val Gln Gly Ser Ser Gln Ala Ser Ala Phe Leu Trp Ser		
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Ile Gly Ser Asp Pro Leu Arg Gln Asn Ile Tyr Glu Asn Phe Met Arg		
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Glu Leu Glu Met Ser Arg Thr Asn Thr Glu Asn Ile Glu Thr Ser Thr		
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Asp Leu Leu Phe Glu Lys Glu Gln Gly Val Val Arg Arg Ala Gly Trp		
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Leu Val Ala Arg Arg Lys Trp Lys Gln Tyr Trp Val Thr Leu Lys Gly		
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Cys Thr Leu Leu Phe Tyr Glu Thr Tyr Gly Lys Asn Ser Met Asp Gln		
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Ser Ser Ala Pro Arg Cys Ala Leu Phe Ala Glu Asp Ser Ile Val Gln		
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Ser Val Pro Glu His Pro Lys Lys Glu Asn Val Phe Cys Leu Ser Asn		
580	585	590
Ser Phe Gly Asp Val Tyr Leu Phe Gln Ala Thr Ser Gln Thr Asp Leu		
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Glu Asn Trp Val Thr Ala Val His Ser Ala Cys Ala Ser Leu Phe Ala		
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Ala Glu Leu Gln Leu Ser Val Val Ser Asp Pro Lys Asn Arg Lys Ala		
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Ala Leu Val Cys Ser Arg Asp Asp Ser Ala Leu Arg Lys Arg Thr Leu		
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Ile Thr Gln Val Asp Glu Leu Leu His Ile Tyr Gly Ser Thr Val Asp		
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Gly Val Pro Arg Asp Asn Ala Trp Glu Ile Gln Thr Tyr Val His Phe		
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Gln Asp Asn His Gly Val Thr Val Gly Ile Lys Pro Glu His Arg Val
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 Glu Asp Ile Leu Thr Leu Ala Cys Lys Met Arg Gln Leu Glu Pro Ser
 835 840 845
 His Tyr Gly Leu Gln Leu Arg Lys Leu Val Asp Asp Asn Val Glu Tyr
 850 855 860
 Cys Ile Pro Ala Pro Tyr Glu Tyr Met Gln Gln Val Tyr Asp Glu
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 Ile Glu Val Phe Pro Leu Asn Val Tyr Asp Val Gln Leu Thr Lys Thr
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Lys Ala Met Glu Lys Val Ala Ser His Ile Asn Glu Met Gln Lys Ile			
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Tyr Glu Asp Tyr Gly Thr Val Phe Asp Gln Leu Val Ala Glu Gln Ser			
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Gly Thr Glu Lys Glu Val Thr Glu Leu Ser Met Gly Glu Leu Leu Met			
1315	1320	1325	
His Ser Thr Val Ser Trp Leu Asn Pro Phe Leu Ser Leu Gly Lys Ala			
1330	1335	1340	
Arg Lys Asp Leu Glu Leu Thr Val Phe Val Phe Lys Arg Ala Val Ile			
1345	1350	1355	1360
Leu Val Tyr Lys Glu Asn Cys Lys Leu Lys Lys Leu Pro Ser Asn			
1365	1370	1375	
Ser Arg Pro Ala His Asn Ser Thr Asp Leu Asp Pro Phe Lys Phe Arg			
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Trp Leu Ile Pro Ile Ser Ala Leu Gln Val Arg Leu Gly Asn Pro Ala			
1395	1400	1405	
Gly Thr Glu Asn Asn Ser Ile Trp Glu Leu Ile His Thr Lys Ser Glu			
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Ile Glu Gly Arg Pro Glu Thr Ile Phe Gln Leu Cys Cys Ser Asp Ser			
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Glu Ser Lys Thr Asn Ile Val Lys Val Ile Arg Ser Ile Leu Arg Glu			
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Asn Phe Arg Arg His Ile Lys Cys Glu Leu Pro Leu Glu Lys Thr Cys			
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Lys Asp Arg Leu Val Pro Leu Lys Asn Arg Val Pro Val Ser Ala Lys			
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Gly Arg Gln Asp Ser Lys Ser Thr Ser Pro Gly Lys Tyr Pro His Pro			
1540	1545	1550	
Gly Leu Ala Asp Phe Ala Asp Asn Leu Ile Lys Glu Ser Asp Ile Leu			
1555	1560	1565	
Ser Asp Glu Asp Asp Asp His Arg Gln Thr Val Lys Gln Gly Ser Pro			
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Thr Lys Asp Ile Glu Ile Gln Phe Gln Arg Leu Arg Ile Ser Glu Asp			
1585	1590	1595	1600
Pro Asp Val His Pro Glu Ala Glu Gln Gln Pro Gly Pro Glu Ser Gly			
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Glu Gly Gln Lys Gly Gly Glu Gln Pro Lys Leu Val Arg Gly His Phe			
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Leu Leu Lys Ala Gln Ile Arg His Gln Ser Leu Asp Ser Gln Ser Glu			
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Asn Ala Thr Ile Asp Leu Asn Ser Val Leu Glu Arg Glu Phe Ser Val			
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<213> Homo sapiens

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<220>
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Lys Lys Lys Pro Lys Gly Ser Ile Pro Leu Ser Gly Cys Gln Val Glu
35 40 45
Lys Pro Asp Lys Asn Cys Phe Glu Ile Arg Thr Asp Arg Thr Leu Leu
50 55 60
Leu Gln Ala Glu Ser Glu Glu Glu Arg Lys Glu Trp Val Lys Ala Ile
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Gln Ser Ala Ile Arg

85

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<220>
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Val Arg Pro Gly Met Thr Val Arg Asp Ala Leu Ala Lys Ala Leu Lys
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Lys Arg Gly Leu Asn Pro Ser Ala Cys Val Val Arg Arg Ser Gly Asp
35 40 45
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Ser Leu Pro Gly Pro Glu Glu Leu Val Val Glu Asn Leu
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20 25 30
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35 40 45
Ile Leu Ser Val Asn Gly Gln Asp Val Glu Asn Met Ser His Glu Arg
50 55 60
Ala Val Leu Ala Ile Lys Gly Ser Gly Gly Glu Val Thr Leu Thr Val
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Leu Arg Asp

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Val Leu Lys Glu Leu Leu Glu Thr Glu Lys Lys Tyr Val Arg Asp Leu
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Glu Ile Leu Asp Asn Val Tyr Met Lys Pro Leu Arg Glu Ala Ala Ile
20 25 30

Ser Ser Lys Pro Val Leu Thr Pro Asp Asp Ile Glu Thr Ile Phe Ser
 35 40 45
 Asn Ile Glu Asp Ile Tyr Glu Phe His Arg Glu Phe Leu Lys Ser Ser
 50 55 60
 Leu Glu Ala Arg Ile Ser Ser Gln Phe Glu Asp Leu Asp Glu Lys
 65 70 75 80
 Lys Ile Glu Pro Ser Ala Pro Arg Leu Gly Asp Leu Phe Leu Lys Leu
 85 90 95
 Lys Glu Pro Phe Leu Gln Val Tyr Gly Glu Tyr Cys Ser Asn Lys Pro
 100 105 110
 Tyr Ala Gln Glu Leu Leu Glu Lys Leu Arg Gln Ala Ala Ser Asn Pro
 115 120 125
 Gln Phe Ala Glu Phe Leu Asp Glu Val Glu Ala Ser Ser Asn Thr Gly
 130 135 140
 Ala Lys Asp Asp Ala Val Lys Leu Thr Leu Gln Ser Leu Leu Leu Lys
 145 150 155 160
 Pro Val Gln Arg Ile Leu Arg Tyr Pro Leu Leu Leu Lys Glu Leu Leu
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 Lys His Thr Pro Glu Gly Glu Asp Gln Pro Asp Arg Glu Asp Leu Lys
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 Lys Ala Leu Asp Leu Leu Gln Asp Leu Ala Lys Ser Ile Asn Glu
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<210> 8

<211> 67

<212> PRT

<213> Artificial Sequence

<220>

<223> Consensus sequence

<400> 8

Phe Val Leu Phe Asn Asn Val Leu Leu Tyr Tyr Lys Asp Ser Lys Lys
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 20 25 30
 Asp Lys Asn Cys Phe Glu Ile Arg Thr Asp Arg Thr Leu Leu Leu Gln
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 Ala Glu Ser Glu Glu Glu Arg Lys Glu Trp Val Lys Ala Ile Gln Ser
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 Ala Ile Arg
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<210> 9

<211> 82

<212> PRT

<213> Artificial Sequence

<220>

<223> Consensus sequence

<400> 9

Val Ile Lys Glu Gly Trp Leu Leu Lys Lys Ser Lys Ser Trp Lys Lys
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 20 25 30
 Lys Pro Lys Gly Ser Ile Pro Leu Ser Gly Cys Ser Val Arg Glu Pro

35	40	45
Cys Phe Glu Ile Val Thr Asp Arg Thr Leu Leu Leu Gln Ala Glu Ser		
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Glu Glu Glu Arg Glu Glu Trp Val Glu Ala Leu Gln Ser Ala Ile Ala		
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Lys Ala		80

<210> 10
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<212> PRT
<213> Artificial Sequence

<220>
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Val Arg Pro Gly Lys Thr Val Arg Asp Ala Leu Ala Lys Ala Leu Lys
20 25 30
Lys Arg Gly Leu Asn Pro Glu Ala Cys Val Val Arg Leu Arg Gly Asp
35 40 45
Pro Gln Glu Gly Glu Lys Lys Pro Leu Asp Leu Asn Gln Asp Ile Ser
50 55 60
Ser Leu Ala Gly Gln Glu Leu Val Val Glu Glu Leu
65 70 75

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Val Pro Gly Ser Pro Ala Ala Lys Ala Gly Arg Lys Ser Leu Gly Leu
20 25 30
Leu Lys Val Gly Asp Val Ile Leu Glu Val Asn Gly Glu Thr Ser Val
35 40 45
Glu Gly Leu Thr His Glu Glu Ala Val Asp Leu Leu Lys Lys Ala Gly
50 55 60
Gly Gly Gly Val Gly Glu Lys Val Thr Leu Thr Val Leu Arg Gly Gly
65 70 75 80

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Val Leu Lys Glu Leu Leu Gln Thr Glu Arg Asn Tyr Val Arg Asp Leu
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 Lys Ile Leu Val Glu Val Phe Leu Lys Pro Leu Lys Lys Glu Ala Lys
 20 25 30
 Ser Ser Leu Leu Pro Leu Leu Ser Pro Asp Glu Val Lys Thr Leu Phe
 35 40 45
 Gly Pro Asn Ile Glu Glu Ile Tyr Glu Phe His Arg Arg Phe Leu Asp
 50 55 60
 Glu Leu Glu Glu Arg Val Glu Glu Trp Leu Leu Ser Lys Asp Leu Lys
 65 70 75 80
 Ser Glu Arg Asn Ser Val Ile Glu Asp Ser Gly Glu Arg Ile Gly Asp
 85 90 95
 Val Phe Leu Lys Leu Phe Ser Ala Glu Phe Phe Lys Ile Tyr Ser
 100 105 110
 Glu Tyr Cys Ser Asn His Pro Asp Ala Leu Glu Leu Leu Lys Lys Leu
 115 120 125
 Met Lys Lys Lys Asn Pro Ala Phe Gln Lys Phe Leu Lys Glu Ile
 130 135 140
 Glu Ser Lys Pro Asn Cys Arg Ser Lys Ser Glu Ala Arg Leu Thr Leu
 145 150 155 160
 Glu Ser Leu Leu Ile Lys Pro Val Gln Arg Leu Thr Lys Tyr Pro Leu
 165 170 175
 Leu Leu Lys Glu Leu Leu Lys His Thr Pro Pro Asp His Glu Asp Arg
 180 185 190
 Glu Asp Leu Lys Lys Ala Leu Glu Ala Ile Lys Glu Leu Ala Ser Gln
 195 200 205
 Val Asn Glu
 210

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 Arg Tyr Phe Val Leu Phe Asn Gly Val Leu Leu Tyr Tyr Lys Ser Lys
 20 25 30
 Lys Pro Lys Gly Ser Ile Pro Leu Ser Gly Cys Ser Val Arg Glu Pro
 35 40 45
 Cys Phe Glu Ile Val Thr Asp Arg Thr Leu Leu Leu Gln Ala Glu Ser
 50 55 60
 Glu Glu Glu Arg Glu Glu Trp Val Glu Ala Leu Gln Ser Ala Ile Ala
 65 70 75 80
 Lys Ala